



STIC Search Report

EIC 2800

STIC Database Tracking Number: 102855

TO: Anthony Nguyen
Location: CP4 9D29
Art Unit : 2854
Thursday, September 04, 2003

Case Serial Number: 09873778

From: Bode Fagbohunka
Location: EIC 2800
CP4-9C18
Phone: 703-605-1726

bode.fagbohunka@uspto.gov

Search Notes

Examiner Nguyen,

Please find attached the results of your search for 09873778. The search was conducted using the standard collection of databases on dialog for EIC 2800. The tagged references appear to be the closest references located during our search.

If you would like a re-focus please let me know or if you have any questions regarding the search results please do not hesitate to contact me.

Bode Fagbohunka

102855 6493

SEARCH REQUEST FORM Scientific and Technical Information Center - EIC2800

Rev. 8/27/01

This is an experimental format -- Please give suggestions or comments to Jeff Harrison, CP4-9C18, 306-5429.

Date 9/2/03 Serial # 09/873778 Priority Application Date 06/04/01Your Name ANTHONY NGUYEN Examiner # 70293AU 2854 Phone 308-2869 Room CP4-9D29In what format would you like your results? Paper is the default. PAPER DISK EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

Where have you searched so far on this case?

Circle: USPT DWPI EPO Abs JPO Abs IBM TDB

Other: _____

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements.

Des 350,126 US 6351225
US 6016139 US 5841076 Des 363277 Des 365335

What types of references would you like? Please checkmark:

Primary Refs ☒ Nonpatent Literature ☒ Other US 6047196, US
Secondary Refs _____ Foreign Patents ☒ 6091404, 6043809
Teaching Refs _____What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.Standard keyboard or keypad with a
track ball and scroll mechanism located about
one inch below the keyboard or keypad
See the attached fig. 2 and claims
1 and 23.

TELETYPE

Keyboard

12

number
function key

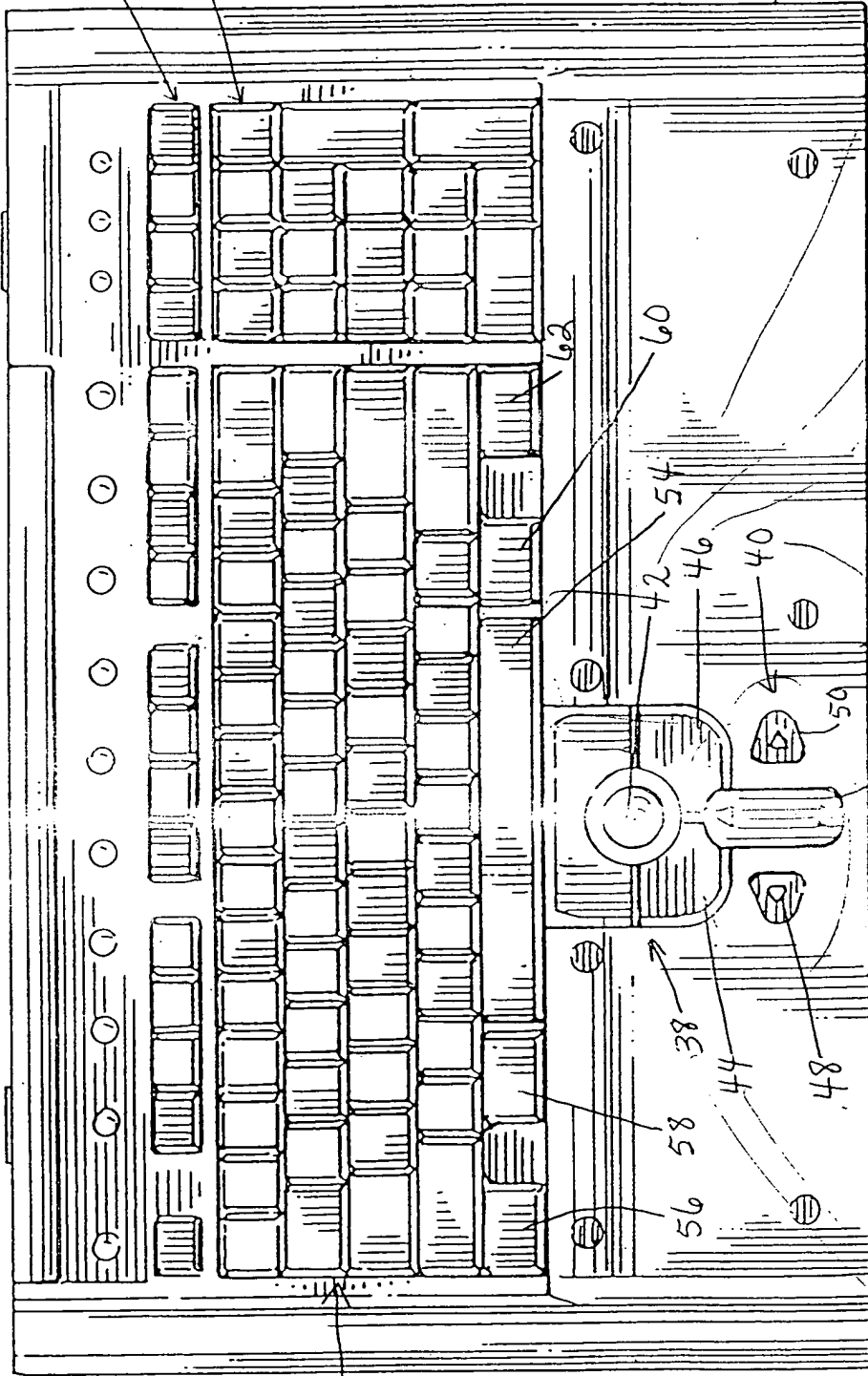
34

32

30

number
keypad

Fig. 2



space key

small

small buttons

activate buttons

space key

combination

36

52

small

small buttons

activate buttons

space key

combination

36

52

small

small buttons

activate buttons

space key

Response to Office Action
Mailed March 17, 2003
For Serial No. 09/873,778

STATUS OF THE CLAIMS
(NO CURRENT AMENDMENTS)

1. (Original) A keyboard comprising:
a standard keypad;³⁰
a track ball mechanism;³⁸ and
a scroll mechanism⁴⁰ being located less than one inch from the track ball mechanism, at least one of the track ball mechanism and the scroll mechanism being located less than one inch from the standard keypad.

2. (Original) The keyboard, as set forth in claim 1, wherein the standard keypad comprises a "QWERTY" keypad.

3. (Original) The keyboard, as set forth in claim 1, wherein the track ball mechanism comprises:
a track ball;⁴² and
two buttons^{44, 46} positioned adjacent the track ball.

4. (Original) The keyboard, as set forth in claim 1, wherein the scroll mechanism comprises:
a device adapted to scroll up;⁵²
a device adapted to scroll down;⁵²
a device adapted to scroll left;⁴⁸ and
a device adapted to scroll right.⁵⁰

5. (Original) The keyboard, as set forth in claim 1, wherein the scroll mechanism comprises:
a left scroll button;⁴⁷
a right scroll button;⁵⁰ and
an up/down scroll button.⁵²

Response to Office Action
Mailed March 17, 2003
For Serial No. 09/873,778

6. (Original) The keyboard, as set forth in claim 5, wherein up/down button of the scroll mechanism is integrated with the track ball mechanism.

7 – 14 (Withdrawn)

15. (Original) The keyboard, as set forth in claim 1, wherein the track ball mechanism is disposed above the scroll mechanism.

16 – 20 (Withdrawn)

21. (Original) The keyboard, as set forth in claim 1, wherein the track ball mechanism and the scroll mechanism are disposed below the standard keypad.

22. (Original) The keyboard, as set forth in claim 21, wherein at least one of the track ball mechanism and the scroll mechanism is located centrally below the standard keypad.

23. (Original) A keyboard comprising:
a standard keypad;
a track ball mechanism located centrally beneath the standard keypad; and
a scroll mechanism being located less than one inch from the track ball mechanism.

24. (Original) The keyboard, as set forth in claim 23, wherein the standard keypad comprises a "QWERTY" keypad.

25. (Original) The keyboard, as set forth in claim 23, wherein the track ball mechanism comprises:

a track ball; and
two buttons positioned adjacent the track ball.

Set	Items	Description
S1	221239	KEYBOARD? OR KEY()BOARD? OR KEY?()PAD? OR KEYPAD?
S2	7212	TRACKBALL? OR TRACK()BALL
S3	53647	SCROLL?
S4	23	S1(S)S2(S)S3
S5	23	RD (unique items)

? show files

File 2:INSPEC 1969-2003/Aug W4
(c) 2003 Institution of Electrical Engineers

File 8:EI Compendex(R) 1970-2003/Aug W4
(c) 2003 Elsevier Eng. Info. Inc.

File 6:NTIS 1964-2003/Aug W5
(c) 2003 NTIS, Intl Cpyrght All Rights Res

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Aug W5
(c) 2003 Inst for Sci Info

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info

File 65:Inside Conferences 1993-2003/Aug W5
(c) 2003 BLDSC all rts. reserv.

File 35:Dissertation Abs Online 1861-2003/Aug
(c) 2003 ProQuest Info&Learning

File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Jul
(c) 2003 The HW Wilson Co.

File 94:JICST-EPlus 1985-2003/Aug W5
(c)2003 Japan Science and Tech Corp(JST)

File 347:JAPIO Oct 1976-2003/May(Updated 030902)
(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200356
(c) 2003 Thomson Derwent

File 16:Gale Group PROMT(R) 1990-2003/Sep 03
(c) 2003 The Gale Group

File 160:Gale Group PROMT(R) 1972-1989
(c) 1999 The Gale Group

File 148:Gale Group Trade & Industry DB 1976-2003/Sep 03
(c)2003 The Gale Group

?

5/9/2 (Item 1 from file: 347)
DIALOG(R) File 347:JAPIO
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07646970 **Image available**
HAND-HELD POINTING DEVICE WITH TEN KEY PAD

PUB. NO.: 2003-140824 [JP 2003140824 A]
PUBLISHED: May 16, 2003 (20030516)
INVENTOR(s): HOSHI TADASHI
APPLICANT(s): HOSHI TADASHI
APPL. NO.: 2001-339185 [JP 20011339185]
FILED: November 05, 2001 (20011105)
INTL CLASS: G06F-003/033; G06F-003/02

ABSTRACT

PROBLEM TO BE SOLVED: To provide a pointing device with a ten- key pad arranged not to interfere with other functional operation buttons while allowing appropriate operation of ten-key input and mouse pointer operation without passing it to the other hand in the state of holding it in the palm of only one hand.

SOLUTION: This pointing device is formed as a twofold casing 1 of a conformed form to be held in the palm, constituted to be foldable in two and developable. A track ball 12 and a scroll key 13 are arranged at an outward face 10a of a developing side casing 10 in developing. A ten-key pad 14 and a cursor key 15 are arranged at an opposed face 11a of a palm holding side casing 11 in developing, and a click button 16 is arranged at the side face. Each key of the ten- key pad 14 is arranged within an operable range only with the thumb on the palm holding side.

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5/9/4 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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015365206 **Image available**
WPI Acc No: 2003-426144/200340
XRPX Acc No: N03-340462

Pointing device with keypad for use with personal computer, has palm holder housing with numerical key pad and cursor key and covering housing with track ball and scroll key

Patent Assignee: HOSHI T (HOSH-I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2003140824	A	20030516	JP 2001339185	A	20011105	200340 B

Priority Applications (No Type Date): JP 2001339185 A 20011105

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2003140824	A	5	G06F-003/033	

Abstract (Basic): JP 2003140824 A

NOVELTY - A clicking key (16) is arranged at the side of a palm holder housing (11) having a numerical keypad and a cursor key. A track ball (12) and a scroll key (13) are arranged at outer

surface of a covering housing (10).

USE - Pointing device with keypad for use with personal computer.

ADVANTAGE - Increases the operability as keypad for numerical input is provided in palm holder housing.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the pointing device. (Drawing includes non-English language text).

covering housing (10)

palm holder housing (11)

track ball (12)

scroll key (13)

clicking key (16)

pp; 5 DwgNo 1/4

Title Terms: POINT; DEVICE; PERSON; COMPUTER; PALM; HOLD; HOUSING; NUMERIC; KEY; PAD; CURSOR; KEY; COVER; HOUSING; TRACK; BALL; SCROLL; KEY

Derwent Class: T01; T04

International Patent Class (Main): G06F-003/033

International Patent Class (Additional): G06F-003/02

File Segment: EPI

Manual Codes (EPI/S-X): T01-C02; T01-C02B1; T04-F01; T04-F02

5/9/6 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015205905 **Image available**

WPI Acc No: 2003-266440/200326

XRPX Acc No: N03-211644

Keyboard for personal computer, laptop, has track ball mechanism and scroll mechanism which are located in central portion of keyboard and placed in close proximity to one another

Patent Assignee: EICHBERGER D P (EICH-I); FELCMAN C (FELC-I); LANDRUM G (LAND-I); RARICK T (RARI-I)

Inventor: EICHBERGER D P; FELCMAN C; LANDRUM G; RARICK T

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020181991	A1	20021205	US 2001873778	A	20010604	200326 B

Priority Applications (No Type Date): US 2001873778 A 20010604

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20020181991	A1	13	B41J-005/12	

Abstract (Basic): US 20020181991 A1

NOVELTY - A track ball mechanism and a scroll mechanism are located in a central portion of the keyboard (12), and are placed in close proximity to one another.

USE - Keyboard for personal computer (PC), laptop, rack mountable device, etc.

ADVANTAGE - By locating the scroll mechanism and the track ball mechanism in the central portion of the keyboard, a user can access the track ball mechanism and the scroll mechanism with one hand without moving the hand from the central portion of the keyboard.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective of the computer.

keyboard (12)

pp; 13 DwgNo 1/12

Title Terms: KEYBOARD; PERSON; COMPUTER; TRACK; BALL; MECHANISM; SCROLL; MECHANISM; LOCATE; CENTRAL; PORTION; KEYBOARD; PLACE; CLOSE; PROXIMITY;

ONE

Derwent Class: P75; T01; T04
International Patent Class (Main): B41J-005/12
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): T01-C02A; T04-F01B; T04-F02B5

5/9/7 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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015085444 **Image available**
WPI Acc No: 2003-145962/200314

Input device having wheel function and method for driving the same

Patent Assignee: SEJIN ELECTRON INC (SEJI-N)

Inventor: LEE G S

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
KR 2002074953	A	20021004	KR 200115068	A	20010323	200314 B

Priority Applications (No Type Date): KR 200115068 A 20010323

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
KR 2002074953	A		1 G06F-003/03	

Abstract (Basic): KR 2002074953 A

NOVELTY - An input device having a wheel function and a method for driving the same are provided to supply an input device having a wheel besides a mouse and perform a wheel function using a conventional mouse corresponding unit, that is, a touch pad, a track ball, or a wheelless mouse without appending an additional scroll device.

DETAILED DESCRIPTION - A plurality of character and numeral keys is mounted in a **keyboard** (100). In addition, a touch pad(or **track ball**) (115) and the left and right buttons(117,119) for a touch pad are provided. The left and right buttons(117,119) are corresponded to the left and right buttons of a general mouse. A **scroll wheel**(111) is mounted in the **keyboard** (100). The **scroll wheel**(111) may be positioned adjacent to the touch pad(115). The **keyboard** (100) includes a key matrix having a plurality of character and numeral keys, a movement detecting unit for detecting a movement of a user finger contacted with the touch pad(115), and two button operation detecting units for detecting operations of the left and right buttons(117,119). In addition, the **keyboard** (100) includes a wheel position detecting unit and a wheel press detecting unit for sensing an operation of the **scroll wheel**(111).

pp; 1 DwgNo 1/10

Title Terms: INPUT; DEVICE; WHEEL; FUNCTION; METHOD; DRIVE

Derwent Class: T01; T04

International Patent Class (Main): G06F-003/03

File Segment: EPI

Manual Codes (EPI/S-X): T01-C02B1; T04-F02

5/9/10 (Item 1 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)
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07653273 Supplier Number: 63722410 (THIS IS THE FULLTEXT)
The young pretenders.

Electronics Times, p24

July 24, 2000

ISSN: 0142-3118

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 2298

TEXT:

If you want to know the future of electronics, get a crystal ball - or visit the annual New Designers exhibition in London to find out what today's product design graduates are dreaming up for all our tomorrows. Luke Collins reports, with pictures by Cliff Barden

I like to call myself a DJ," said Ben Hipkiss, who has just taken an HND in product design and manufacturing at Somerset College of Art and Design.

Little wonder then that DJ Hipkiss chose to design a portable mixing desk for his final year project. His idea was to bring the flexibility that mixing vinyl records on turntables has to the digital age of MP3 music tracks. His final console design therefore includes a pair of CD- sized 'turntables' which can be assigned to control a range of inputs, from raw MP3 tracks and samples through to complete mixed tracks. The console also has an effects pad, a pair of flat monitor speakers and links to the Internet to collect bang-up-to-date music files.

For the future, Hipkiss plans to either continue his design education with a degree at Cardiff, or perhaps to talk to a company such as Sony to commercialise his mixing console.

Hannah Williams believes a night out at the pub should be a democratic process - if the music is too loud and too unfashionable or if the lighting annoys, then you should be able to vote to change it.

Williams has just completed her BA in design futures at the University of Wales College, Newport, a course which looks at "the aesthetics of the experience of technology", according to course subject leader Steve Thompson. What this means is a focus on how people interact with technology rather than on the technology itself.

Williams' Booze Buoy project is an effort to ensure more people enjoy an evening out at a pub or club. It springs from her work behind a bar where she was constantly being asked to adjust the music, heating or lighting - leaving everyone dissatisfied. With the Booze Buoy, control of the pub's ambience is in the punters' hands.

When customers buy a drink, they get a sterile-packed Booze Buoy, which comes with a cap. Putting the Buoy in a drink activates it, allowing the user to send a signal about their preferences over an RF link to a central controller. Each cap will fit any Booze Buoy, and is used to tilt the Buoy over, so that by stacking the caps on one Buoy, the tilt can be increased, representing a more powerful vote.

Williams believes this mechanism could be used to reach a democratic compromise about a pub's ambience - although she does see problems when the voting power is represented by a lot of heavy-drinking bikers turning up at once.

She believes the Booze Buoy could also be used as a marketing tool, offering extra caps, and hence voting power, with a particular drink promotion. Williams also says the Booze Buoy could also deliver valuable survey data to pub owners and drinks chains, immediately capturing customers' preferences.

More prosaically, the Booze Buoy could carry a sensor for substances such as Rohypnol, the odourless, tasteless, colourless liquid implicated in several 'date rapes', to help with safer drinking for all.

A keyboard for the disabled could also be used by helicopter rescue pilots, according to designer Lawrence Carr.

Carr, who has just gained a 2:1 in 3D design from Manchester Metropolitan University, has developed a qwerty keyboard for use with one hand. His project sprang from the needs of a local man suffering from

multiple sclerosis, with whom he developed a series of drawings and later models of the one-handed keyboard.

Carr says the most important part of the project has been the key layout. He argues that since the **keyboard** is mainly for use by formerly able-bodied people, it was important to keep the qwerty layout they were familiar with. The IR-linked **keyboard** also includes a **trackball** and **scroll** wheel.

Carr says Liverpool's coast guard has shown interest in the keyboard design for use in its helicopters. Having finished his degree, he now wants to go on into industrial product design, working with people with disabilities.

Ben Mortimer has redesigned the laptop for two reasons: as a reaction to the amount of waste the industry is creating and to personalise it for its user.

Mortimer, a BA design for industry graduate at the University of Northumbria at Newcastle, says the laptop has "one of the most rapid rates of obsolescence out there". His reaction is to break the product apart so that only elements of it have to be replaced to keep up with technology.

"Why throw away the whole computer when only a part may be obsolete?" he said. "And why can't the computer have real (long-term) value to the user - like a leather wallet?"

"A wallet can say a lot about a person - that they respect style rather than fashion, quality rather than disposability."

To demonstrate his idea, Mortimer used an IBM Thinkpad 570, which he repackaged in a leather wallet with separate keyboard, screen and processing 'cartridge'. This cartridge, he argues, could be leased from its manufacturer "like a disposable camera".

Mortimer has already won a Student Design Award from the Royal Society of Arts, and hopes to travel to New York and San Francisco to work as a freelance designer.

Vincent Law reckons he knows the way to get a faster PC - and that's to water-cool it.

Law's final year project for his BSc in industrial design at South Bank University involved water cooling a PC CPU to 38 degrees C so that he could then over-clock it by 50%. Using a heatsink and fan-driven radiator, Law was able to run a 300MHz cpu at 450MHz. And he reckons that the cooling components cost just #10, providing a substantial cost advantage over buying a faster processor, if reliability issues can be dealt with.

Law has packaged his water-cooled PC into a single case, including the cooling system, and CD and floppy disk drives from a laptop. He now hopes to go to California to do industrial design, although he also has a job offer from UK Internet TV company now.com.

A work placement at Philips in Eindhoven provided the seed for Alexandra Tyrer's final year project - to design a flat-panel plasma tv.

Tyrer, who has just taken a BA in design for industry at the University of Northumbria at Newcastle, did her placement in her third year and then used a 'design direction statement' to persuade Philips to back her final year project.

She said: "Plasma technology is very very high-tech - my ethos was to soften that, softening the perceived hard edge of technology. I wanted to enhance the perceived audio and visual quality through subtle styling, colours and finishes."

To achieve this, Tyrer mounted the plasma screen so that it protrudes slightly from the case front and wrapped the speaker panels around its edges. This gives the screen depth and makes it look like it is floating, as if mounted a wall.

Tyrer says she sees the tv as a window on the world, and so has worked on making the screen support both 'sit back' entertainment and 'lean forward' information gathering. This same idea of a 'near to far' perspective has been included in the remote control design, which has surface controls for often-used functions, and then structured menus and

shortcuts in a touch-sensitive LCD panel.

Tyrer is interested in taking a Masters in design strategy and innovation, exploring how design fits into an overall business strategy. But she has also been offered a job by Philips, and had interest from Ford, Virgin Atlantic and design consultancy Seymour Powell.

Louise Jowett's final year project was aimed at making the computer more fitting for use in the home.

Jowett, who has just taken a BA (Hons) in design for industry at the University of Northumbria at Newcastle, designed her Plateau system around the idea of a bookshelf. A touchscreen is radio-linked to a bookshelf unit which contains the main CPU, hard disk and charging unit. When users have finished with their touchscreen, they put it back on the shelf, where it is recharged through two metal contact strips.

"People can identify with the bookshelf analogy; you know where things belong," said Jowett.

She has already worked on placement at Nokia designing mobile phones, and in the immediate future wants to travel. But then she would like to work in a manufacturing company where she can see a design through all its manufacturing processes.

More at www.openfolio.com/users/g803468

Robert Senior used a work placement at Scientific Generics to provide the subject for his final year project.

Senior, who has just taken the BA (Hons) design for industry degree at the University of Northumbria at Newcastle, worked at Scientific Generics during his summer placement. When he left, the company agreed to sponsor his final year project, to find a commercialisation route for the company's intrasonics technology.

Intrasonics provides a way of sending data over sound waves, both in free space and underwater. Senior's response was to apply the technology to underwater communications for divers, to free them from the wired communications systems they use at the moment. Combining a Palm Five computer with another Scientific Generics development, the Spiral touchscreen sensor technology, Senior has developed a product concept for a wrist-worn diver's communicator.

The intrasonics technology has also been developed for use as a positioning mechanism, which has been shown to work underwater. This would make Senior's design attractive to sports divers, oceanographers, archaeologists and others who need to accurately position objects underwater.

Senior is hoping his design could be developed into a product through Scientific Generics. In the meantime, dive equipment company ScubaPro/Uwatec in Copenhagen may be interested in employing him as a product designer.

A breakthrough in surgery training has been developed by Lex Lekan Adoti, who has just taken a BSc in engineering product design at South Bank University.

Adoti's Skill Station simulator teaches dermatology students how to use a laser to resurface skin to remove warts, tattoos and other facial blemishes. It is meant to replace the current training regime, a two-day intensive course in which students use real lasers to practice their skills on an orange.

Adoti's simulator uses a combination of technologies to give trainees visual feedback as to how their use of a laser would affect different areas of skin, from the most robust to the most delicate.

The project sprang from a work placement at Virtual Presence, a virtual reality company based in London. Adoti worked on the 3D computer model of the face and the textures to overlay on it. He also worked on the physical design of the simulator, producing a 3D moulding of a face on to which the computer could project an image. This moulding was then set within an EM field generator so that the position of the training 'laser' could be tracked relative to the face.

Adoti says Virtual Presence wants to continue developing the software to incorporate it in another simulator. Meanwhile, a laser development company is apparently also interested in Adoti's technology for its own use.

James Burnapp's final year project sprang from his hobbyist interest in building hi-fi electronics.

Burnapp, who has just finished a BSc (Hons) in product design at the University of Huddersfield, used his final year project to further develop a one-handed soldering iron he has been working on since he was 16.

The final design uses a combination of mechanisms which are already available to keep costs down. For example, solder is held in paste form inside the body of the iron, in the same cartridges as used in pick and place machines. The paste is dispensed using a needle syringe and pump mechanism, based on a toothpaste dispenser. And the heating mechanism, a flow of hot gases, is provided by a catalytic mechanism ignited in the same way as a disposable lighter works.

Burnapp reckons the one-handed iron could be made for #15 each in volumes of 10,000. He is hoping to approach soldering equipment makers with the design, although he has already been turned away by one. Having applied for a patent on an earlier design, Burnapp approached one iron maker, "but I don't think they took me seriously - I was only 16".

He is now freelancing for a lighting company while waiting to hear if his application for a place on Huddersfield's Masters course in engineering design has been successful.

Bruce Garnham used his experience of working in a US water theme park to suggest his final year project at South Bank University - a device to keep parents and kids in touch in busy places.

Garnham, who has just taken his BSc in engineering product design, developed Calm, the child active location monitor. A two-part system, the parent wears one unit and the child the other. A radio signal between the two checks if the child is within a range set by the parent. If not, an audio and vibrating alarm goes off to alert the parent that their child has wandered off.

The child's unit also includes an emergency alarm button to call the parent. Each pair of Calms uses encoding on the radio signal so that many families can use the system in the same area without getting their kids mixed up. And the monitors use the 418MHz radio band so they need not be licensed.

Garnham reckons Calm could retail for #70, or #50 in volume. He says he will be contacting Boots, Mothercare and theme parks about commercialising the design. For the future, he wants to work in a design consultancy where he can work across many design disciplines.

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PUBLISHER NAME: Miller Freeman UK Ltd

EVENT NAMES: *331 (Product development); 310 (Science & research)

GEOGRAPHIC NAMES: *4EUUK (United Kingdom)

PRODUCT NAMES: *3601000 (Electronics); 3674470 (Optoelectronic
Switches & Relays)

INDUSTRY NAMES: BUSN (Any type of business); ELEC (Electronics); INTL (Business, International)

SIC CODES: 3670 (Electronic Components and Accessories); 3674 (Semiconductors and related devices)

NAICS CODES: 3359 (Other Electrical Equipment and Component Manufacturing); 334413 (Semiconductor and Related Device Manufacturing)

SPECIAL FEATURES: LOB

?